

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A microscopy system for observing [on] an object positionable in an object plane by plural observers, the system comprising:

at least one objective lens arrangement for receiving an object side beam emanating from the object plane and for transforming the object side beam into an image side beam;

plural ocular systems arranged to enable each of the plural observers to observe the object by looking into a respective one of the plural ocular systems, wherein each ocular system comprises:

at least one ocular tube having at least one ocular for generating an image of the object plane from the image side beam, and ~~wherein each of the plural ocular systems further comprises~~

at least one image projector having a display for superimposing an image displayed by the display with the beam path of the ocular system such that the image of the object plane is perceived by the respective observer in superposition with the image of the display, ~~and~~ wherein at least one optical setting of a first ocular system of the plural ocular systems is adjustable independently of a corresponding optical setting of a

second ocular system of the plural ocular systems;

and

a controller for generating the image displayed by the display of the first ocular system, wherein the controller is configured to generate the displayed image from a first input image based on the at least one optical setting of the first ocular system.

2. (Original) The microscopy system according to claim 1, wherein the controller is configured to generate the displayed image from a second input image independently of the at least one optical setting, wherein the second input image is superimposed with the first input image.

3. (Original) The microscopy system according to claim 1, wherein the first ocular system comprises a first camera and the second ocular system comprises a second camera, and wherein the controller is configured to determine the at least one optical setting based on a comparison of an image detected by the first camera with an image detected by the second camera.

4. (Original) The microscopy system according to claim 1, wherein the objective lens arrangement comprises an optical axis, wherein the ocular tube of the first ocular system is rotatable about the objective lens arrangement and the optical axis, wherein the at least one optical setting comprises a rotational position of the ocular tube about the optical axis, and

wherein the controller is configured to generate the displayed image from the first input image by rotating the first input image about an image rotation angle determined in dependence of the rotational position of the ocular tube.

5. (Original) The microscopy system according to claim 4, further comprising an angle detector for detecting an angle between the ocular tube and a housing of the objective lens arrangement, and wherein the controller is configured to determine the image rotation angle based on the detected angle.

6. (Original) The microscopy system according to claim 4, wherein the first ocular system comprises a first camera and the second ocular system comprises a second camera, and wherein the controller is configured to determine the image rotation angle based on a comparison of an image detected by the first camera and an image detected by the second camera.

7. (Original) The microscopy system according to claim 1, wherein the first ocular system comprises a zoom system for changing a magnification of the image of the object plane generated by the first ocular system independently of a magnification of the image of the object plane generated by the second ocular system, wherein the at least one optical setting comprises the magnification of the image generated by the first ocular system, and wherein the controller is configured to generate the displayed image from a first input image by scaling with a scale factor determined in dependence of the magnification of the first ocular system.

8. (Original) The microscopy system according to claim 7, further comprising a position sensor for detecting a setting of components of the zoom system with respect to each other, and wherein the controller is configured to determine the scale factor based on the detected setting.

9. (Original) The microscopy system according to claim 7, wherein the first ocular system comprises a first camera and the second ocular system comprises a second camera, and wherein the controller is configured to determine the scale factor based on a comparison of an image detected by the first camera and an image detected by the second camera.

10. (Original) The microscopy system according to claim 1, wherein at least one of the plural ocular systems is a binocular system.

11. (Currently Amended) A microscopy method for displaying a magnified image of an object plane for plural observers, the method comprising:

light optically generating images of the object plane with plural optics, wherein a first optics of the plural optics has at least one optical parameter which may be adjusted independently of a corresponding optical parameter of a second optics of the plural optics;

electronically generating at least one first representation of a first input image based on the at least one adjustable optical parameter; [and]

displaying, to a first observer on a first display, an image generated by superimposing an

image of the electronically generated first representation with the light optically generated image generated with the first optics[.];

electronically generating at least one second representation of the first input image; and
displaying, to a second observer on a second display, an image generated by
superimposing an image of the electronically generated second representation with the light
optically generated image generated with the second optics.

12. (Currently Amended) The microscopy method according to claim 11, wherein at least a portion of the first optics is rotatable about an axis, and wherein the ~~electronical~~ electronic generation of the at least one representation comprises a rotation of the representation based on a rotational position of the portion of the first optics about the axis.

13. (Currently Amended) The microscopy method according to claim 11, wherein a magnification of the first optics is ~~changable~~ changeable, and wherein the ~~electronical~~ electronic generation of the at least one representation comprises scaling of the representation based on the magnification.

14. (New) The microscopy method according to claim 11, further comprising generating the displayed image from a second input image independently of the at least one optical setting, wherein the second input image is superimposed with the first input image.